

Safety Data Sheet

TERRAGUARD® SC

Version 1.14 Revision Date: 05/05/2015 MSDS Number: 400000004030 Country: US
Language: EN

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TERRAGUARD® SC

Product code : 400000004030

Manufacturer or supplier's details

Company name of supplier : MacDermid Agricultural Solutions, Inc

Address : 245 Freight St
Waterbury, CT United States of America 06702

Telephone : (800) 423-8569

Recommended use of the chemical and restrictions on use

Recommended use : Fungicide

Restrictions on use : Agriculture, For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

WARNING!	
Appearance	liquid, suspension
Colour	off-white, to, tan
Odour	mild
Hazard Summary	May cause an allergic skin reaction. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

OSHA Regulatory status : This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

GHS Classification

Skin sensitisation : Category 1

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Blood)

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 2

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GHS Label element

Hazard pictograms



Signal word

: Warning

Hazard statements

: H317 May cause an allergic skin reaction.
H373 May cause damage to organs (Blood) through prolonged or repeated exposure if swallowed.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

: **Prevention:**
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P314 Get medical advice/ attention if you feel unwell.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Target Organs

: Skin

Skin

: May cause allergic skin reaction.

Eyes

: May cause eye irritation.

Chronic Exposure

: Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Aggravated Medical Condition

: Dermatitis
Skin disorders
Allergies

Symptoms of Overexposure

: irritant effects
Allergic reactions

Carcinogenicity:

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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- OSHA** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
- NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO	68694-11-1	>= 30 - < 50

SECTION 4. FIRST AID MEASURES

- If inhaled : If breathed in, move person into fresh air.
Give oxygen or artificial respiration if needed.
Consult a physician after significant exposure.
- In case of skin contact : If on clothes, remove clothes.
Wash off immediately with plenty of water for at least 15 minutes.
If skin irritation occurs, seek medical advice/attention.
Wash contaminated clothing before re-use.
Destroy contaminated shoes.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Get medical attention if irritation develops and persists.
- If swallowed : Do NOT induce vomiting.
Give small amounts of water to drink.
Call a physician or poison control centre immediately.
Never give anything by mouth to an unconscious person.
- Notes to physician : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.
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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Extinguishing media - large fires
Alcohol-resistant foam
(on small fires)
Carbon dioxide (CO₂)
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Dry chemical

Unsuitable extinguishing media : Water spray jet

Specific hazards during fire-fighting : Burning produces noxious and toxic fumes.
Thermal decomposition can lead to release of irritating gases and vapours.

Further information : Fight fire with normal precautions from a reasonable distance.
Keep away from fire, sparks and heated surfaces.
Use water spray to cool unopened containers.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for firefighters : Body covering protective clothing, full "turn-out" gear.
Self-contained breathing apparatus (EN 133)

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Ensure adequate ventilation.
Avoid contact with skin and eyes.
Wear suitable protective clothing, gloves and eye/face protection.
Keep in properly labelled containers.
Dispose of rinse water as waste water.

Environmental precautions : Toxic to aquatic life.
Do not allow material to contaminate ground water system.
Prevent product from entering drains.
Avoid release to the environment.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Shovel into suitable container for disposal.
Large spills should be collected mechanically (remove by pumping) for disposal.
Ventilate the area.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Handle and open container with care.
Protect from contamination.
Use only in well-ventilated areas.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
Wear suitable protective clothing, gloves and eye/face protection.
Wash thoroughly after handling.
Keep container closed when not in use.
Allergic reactions may develop after inhalation of low concentrations, also several hours after exposure. Regular medical checks, including lung function, are recommended for long term and repeat-

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ed use of isocyanates.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Store at room temperature in the original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

- Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
- Hand protection
- Remarks : Chemical resistant protective gloves
- Eye protection : Safety glasses with side-shields
or
Safety goggles
- Skin and body protection : Long sleeved clothing
Remove and wash contaminated clothing before re-use.
Discard contaminated shoes.
To protect against splashes from pouring:
Rubber or plastic boots
Rubber or plastic apron
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wear suitable gloves and eye/face protection.
Avoid contact with skin, eyes and clothing.
Do not inhale aerosol.
Ensure adequate ventilation, especially in confined areas.
When using do not eat, drink or smoke.
Wash thoroughly after handling.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Contaminated work clothing should not be allowed out of the workplace.
Allergic reactions may develop after inhalation of low concentrations, also several hours after exposure. Regular medical checks, including lung function, are recommended for long

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term and repeated use of isocyanates.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid, suspension

Colour : off-white, to, tan

Odour : mild

Odour Threshold : No data available

pH : 6.5 - 8.5

Melting point/range : Not applicable

Boiling point/boiling range : No data available

Flash point : No data available

Evaporation rate : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 1.116 - 1.162 (25 °C)
Method: No information available.

Solubility(ies)

 Water solubility : No data available

 Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

 Viscosity, dynamic : No data available

 Viscosity, kinematic : No data available

Self-Accelerating decomposition temperature (SADT) : Method: No information available.

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SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions : Hazardous polymerisation does not occur.

Conditions to avoid : None known.

Hazardous decomposition products : After evaporation of water, combustion will generate:
Carbon oxides
Nitrogen oxides (NO_x)
Hydrogen halides

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Skin Absorption
Inhalation
Ingestion

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: 3,384 mg/kg
Method: Calculation method

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO

Acute oral toxicity : LD50 (Rat, male and female): 1,420 mg/kg

Acute dermal toxicity : LD50 (Rabbit, male and female): > 5,000 mg/kg

Skin corrosion/irritation

Product:

Species: Rabbit
Result: slight irritation

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO

Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: No eye irritation

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Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO:

Species: Rabbit

Result: Mild eye irritation

Respiratory or skin sensitisation

Product:

Species: Guinea pig

Result: negative

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO:

Species: Guinea pig

Assessment: May cause sensitisation by skin contact.

Result: Causes sensitisation.

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Assessment : negative

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

: Test Type: Unscheduled DNA synthesis (UDS)
Result: negative

: Test Type: Chromosome aberration test in vitro
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Result: negative

Germ cell mutagenicity - Assessment : Not mutagenic in Ames Test, negative

Carcinogenicity

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO:

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

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Reproductive toxicity

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO

Reproductive toxicity - Assessment : No effects on or via lactation, Experiments have shown reproductive toxicity effects on laboratory animals.
Did not show teratogenic effects in animal experiments.

STOT - repeated exposure

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO

Exposure routes: Oral

Target Organs: Blood

Assessment: May cause damage to organs through prolonged or repeated exposure.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Further information

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 1.4153 %

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.58 mg/l
Exposure time: 96 h
Test Type: static test
GLP: yes

LC50 (Cyprinus carpio (Carp)): 0.76 mg/l
Exposure time: 96 h
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 203
GLP: yes

LC50 (Lepomis macrochirus (Bluegill)): 1.2 mg/l
Exposure time: 96 h
Test Type: static test
GLP: yes

LC50 (Cyprinodon variegatus (sheepshead minnow)): 1.4 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.42 mg/l
Exposure time: 48 h

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Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

LC50 (Mysid shrimp): 0.62 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
GLP: yes

Toxicity to algae : EC50 (Freshwater algae): > 4.7 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

EC50 (Scenedesmus capricornutum (fresh water algae)): 1.91 mg/l
End point: Growth rate
Exposure time: 72 h
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC (Cyprinodon variegatus (sheepshead minnow)): 0.12 mg/l
Exposure time: 24 d
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.14 mg/l
Exposure time: 21 d
Test Type: flow-through test
Analytical monitoring: yes
GLP: yes

Persistence and degradability

No data available

Bioaccumulative potential

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO
Partition coefficient: n-octanol/water : log Pow: 1.4

Mobility in soil

No data available

Other adverse effects

No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of waste material in compliance with all federal, state, and local regulations.
Pesticide wastes are toxic.
Do not contaminate ponds, waterways or ditches with chemical or used container.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Triflumizole)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Triflumizole)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Triflumizole)
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171

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Marine pollutant : no
Remarks : Not regulated by DOT and TDG if shipped or transported in packaging less than 450 liters by road and/or rail.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Harmful by ingestion., Skin sensitiser

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
butanone	78-93-3	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
ethylene oxide	75-21-8	10	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

1,4-dioxane	123-91-1
ethylene oxide	75-21-8
methyloxirane	75-56-9

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

ethylene oxide	75-21-8
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FIFRA Hazard Information:

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This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use.

The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION

Harmful if swallowed.

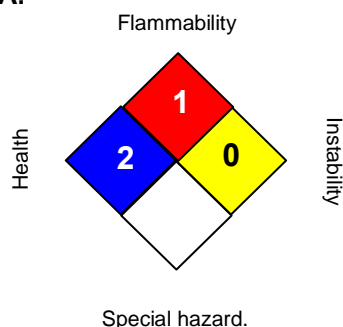
This product is toxic to fish. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. DO NOT contaminate water when cleaning equipment or disposing of equipment washwater or rinsate. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

Do not use or store near heat or open flame.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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Carechem24 International Worldwide Coverage

Emergency Phone Number

<u>Europe:</u>	All European Countries	+44 (0) 1235 239 670 (NCEC)
<u>Asia Pacific:</u>	East / South East Asia – Regional Number	+65 3158 1074
	Australia	+61 2801 44558
	New Zealand	+64 9929 1483
	China	+86 532 8388 9090
	China Taiwan	+86 10 5100 3039
	Japan	+81 345 789 341
	Indonesia	00780 3011 0293
	Malaysia	+60 3 6207 4347
	Thailand	001800 1 2066 6751
	Korea	+65 3158 1285 +82 (0)234 798 401
	Vietnam	+65 3158 1255
	India	+65 3158 1198 +91 1166 411 405
	Pakistan	+65 3158 1329
	Philippines	+65 31581203
	Sri Lanka	+65 3158 1195
	Emergency Phone Number	+65 3158 1200
<u>Middle East / Africa:</u>	Arabic speaking countries	+44 (0) 1235 239 671
	South Africa	+27 21 300 2732
	All other countries	+44 (0) 1235 239 670
<u>America</u>	United States of America and Canada	+1866 928 0789 +1 215 207 0061
<u>Latin America:</u>	Brazil	+55 113 711 9144
	Mexico	+52 555 004 8763
	Chile	+56 225 829 336
	All other countries	+44 (0) 1235 239 670